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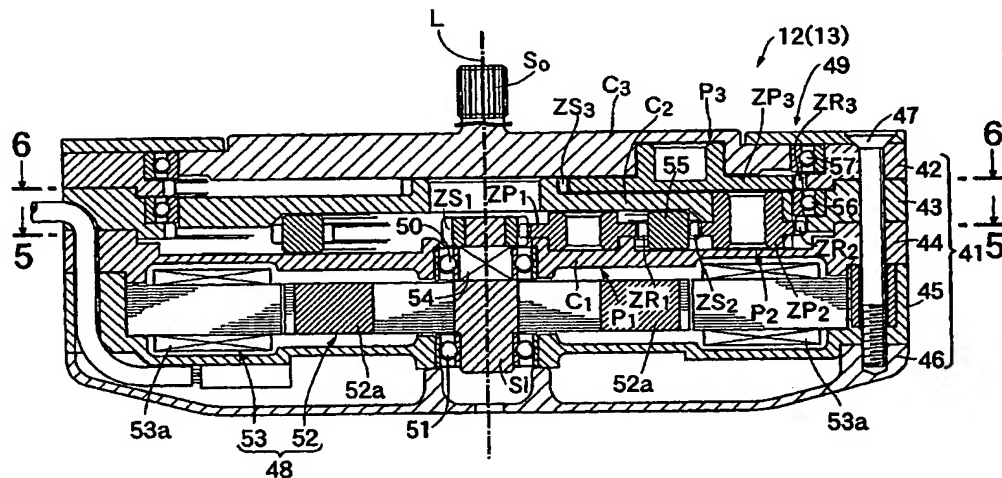
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(54) Title: SPEED REDUCER FOR WALK ASSIST APPARATUS

(54) 発明の名称: 歩行補助装置の減速機



(57) **Abstract:** A speed reducer (49) for a walk assist apparatus comprises first-third planetary gear mechanisms ( $P_1$ ,  $P_2$ ,  $P_3$ ) between an input shaft (Si) connected to a motor (48) and an output shaft (So). The second planetary gear mechanism ( $P_2$ ) is provided radially outside the first planetary gear mechanism ( $P_1$ ) connected to the input shaft (Si), and the third planetary gear mechanism ( $P_3$ ) is provided outside, in an axis (L) direction, the first planetary gear mechanism ( $P_1$ ). As a consequence, the thickness of the speed reducer (49) can be made less than the case where the rotation of the input shaft (Si) is reduced in three stages by the first-third planetary gear mechanisms ( $P_1$ ,  $P_2$ ,  $P_3$ ) and transmitted to the output shaft (So) with all the planetary gear mechanisms ( $P_1$ ,  $P_2$ ,  $P_3$ ) laid over each other in the axis (L) direction. This results that the appearance of the walk assist apparatus when worn by a user is improved.

(57) **要約:** 歩行補助装置の減速機 (49) はモータ (48) に接続された入力軸 (Si) と出力軸 (So) との間に、第1～第3プラネタリギヤ機構 ( $P_1 \sim P_3$ ) を備えており、入力軸 (Si) に接続された第1プラネタリギヤ機構 ( $P_1$ ) の半径方向外側に第2プラネタリギヤ機構 ( $P_2$ ) を配置し、第

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## ABSTRACT

A reduction gear (49) for a walking assistance system is provided that includes first to third planetary gear mechanisms ( $P_1$  to  $P_3$ ) between an input shaft ( $S_i$ ) connected to a motor (48) and an output shaft ( $S_o$ ), the second planetary gear mechanism ( $P_2$ ) being disposed radially outside the first planetary gear mechanism ( $P_1$ ) connected to the input shaft ( $S_i$ ), and the third planetary gear mechanism ( $P_3$ ) being disposed outside, in the direction of an axis  $L$ , the first planetary gear mechanism ( $P_1$ ). It is therefore possible, while reducing the speed of rotation of the input shaft ( $S_i$ ) in three stages by the first to the third planetary gear mechanisms ( $P_1$  to  $P_3$ ) and transmitting the rotation to the output shaft ( $S_o$ ), to reduce the thickness of the reduction gear (49) compared with a case in which the first to the third planetary gear mechanisms ( $P_1$  to  $P_3$ ) are disposed so as to be stacked in the direction of the axis ( $L$ ), thereby improving the appearance when a user is fitted with the walking assistance system.